

FIG. 1

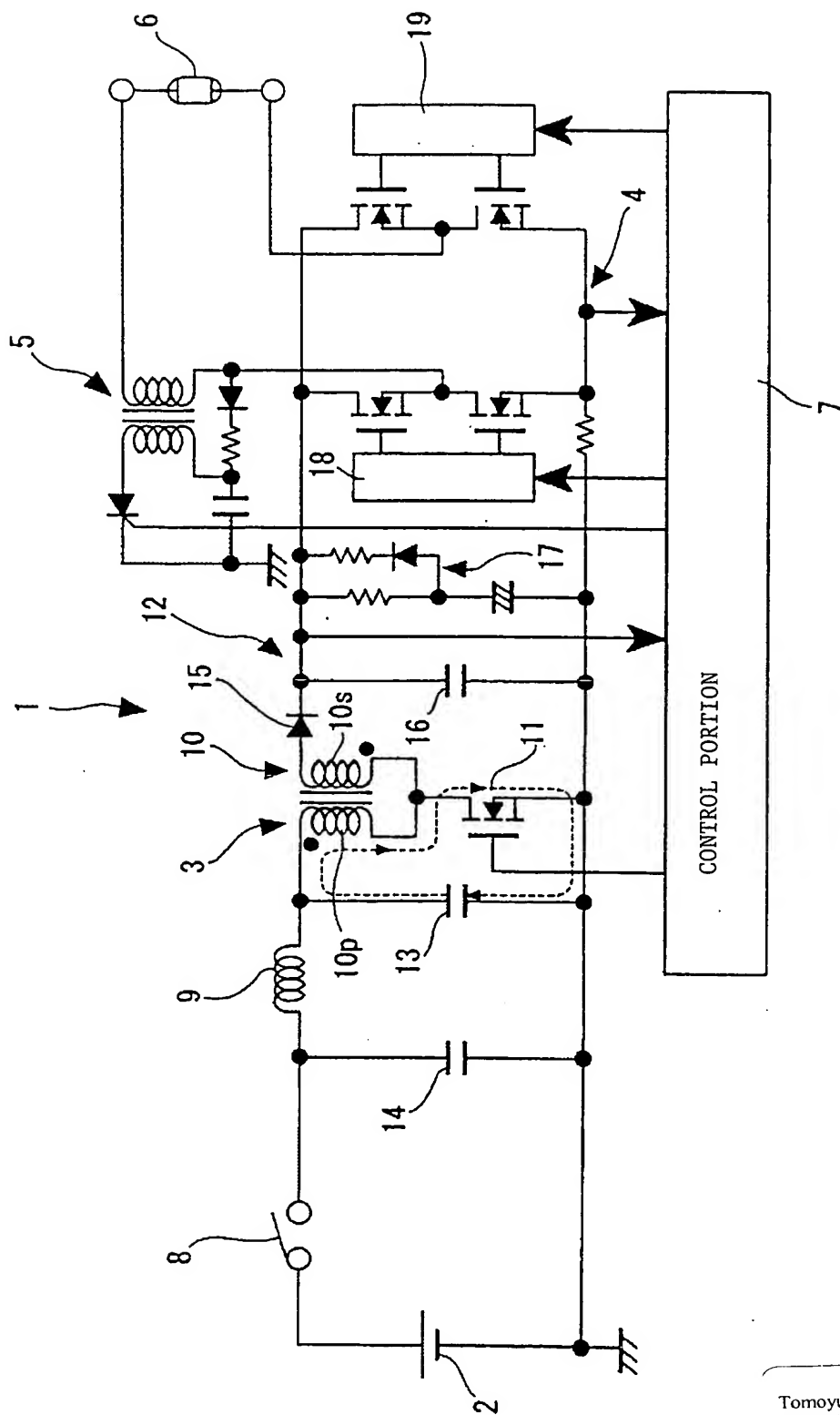


FIG. 2

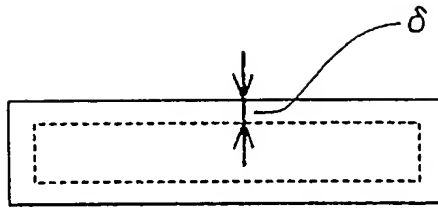


FIG. 3

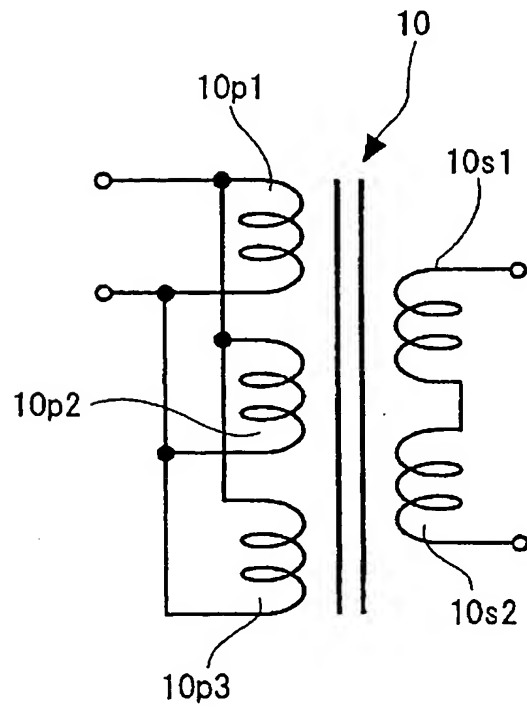
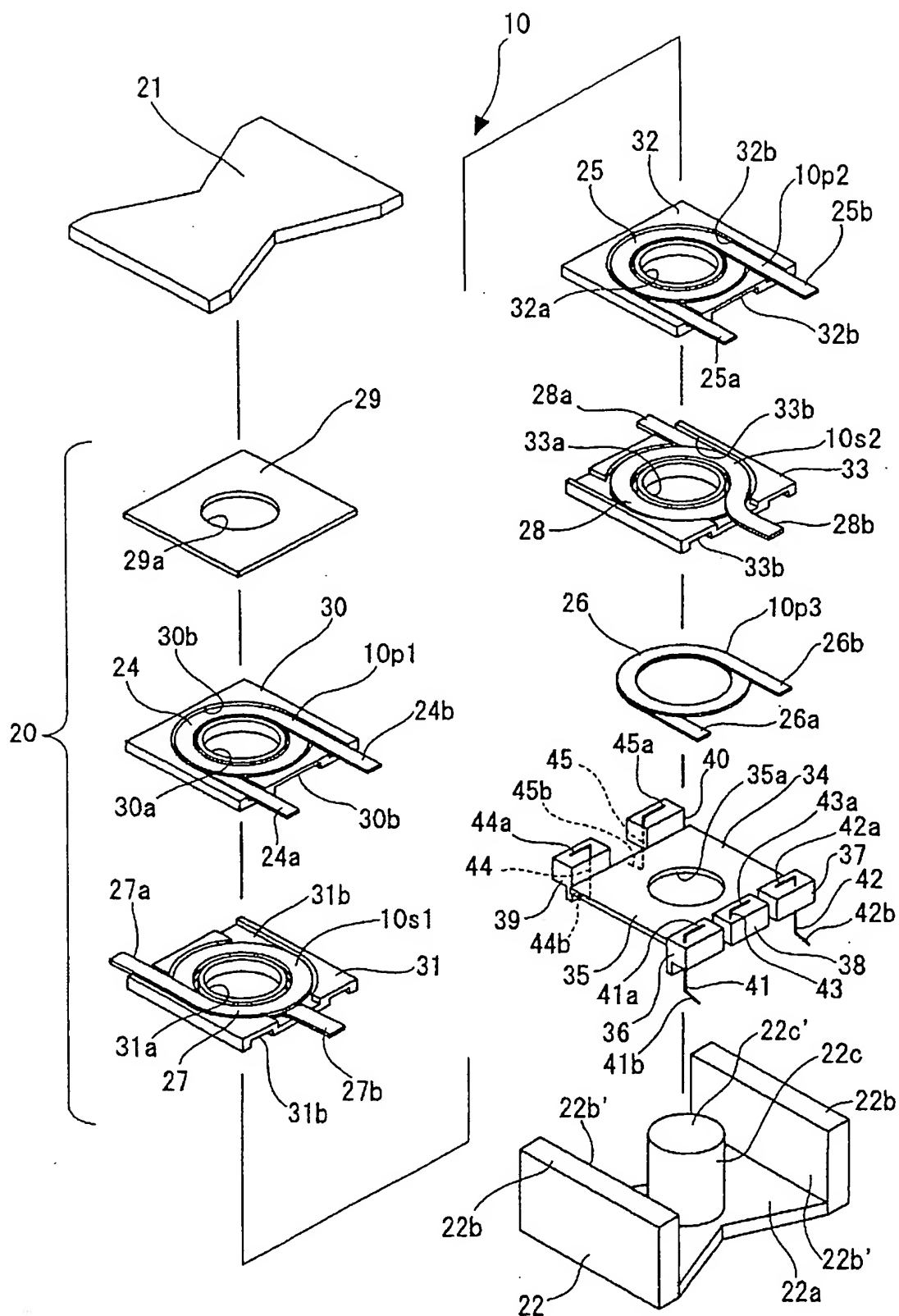


FIG. 4



A cross-sectional view of a semiconductor device 10. The device features a substrate 20 with a top surface 21 and a bottom surface 22. A central region 23 is defined by a top surface 21a and a bottom surface 22a. On the left and right sides of the central region, there are two sets of stacked semiconductor layers, labeled 10s1 and 10s2 on the left, and 10p1, 10p2, and 10p3 on the right. These layers are separated by a central layer 22b. The entire structure is enclosed within a frame 29. A layer 30 is located on the left side, and a layer 32 is on the right side. A layer 34 is at the bottom of the central region. A layer 22c is on the top surface of the central region, and a layer 22c' is on the bottom surface of the central region. A layer 31 is on the right side, and a layer 33 is on the bottom of the right side.

FIG. 6

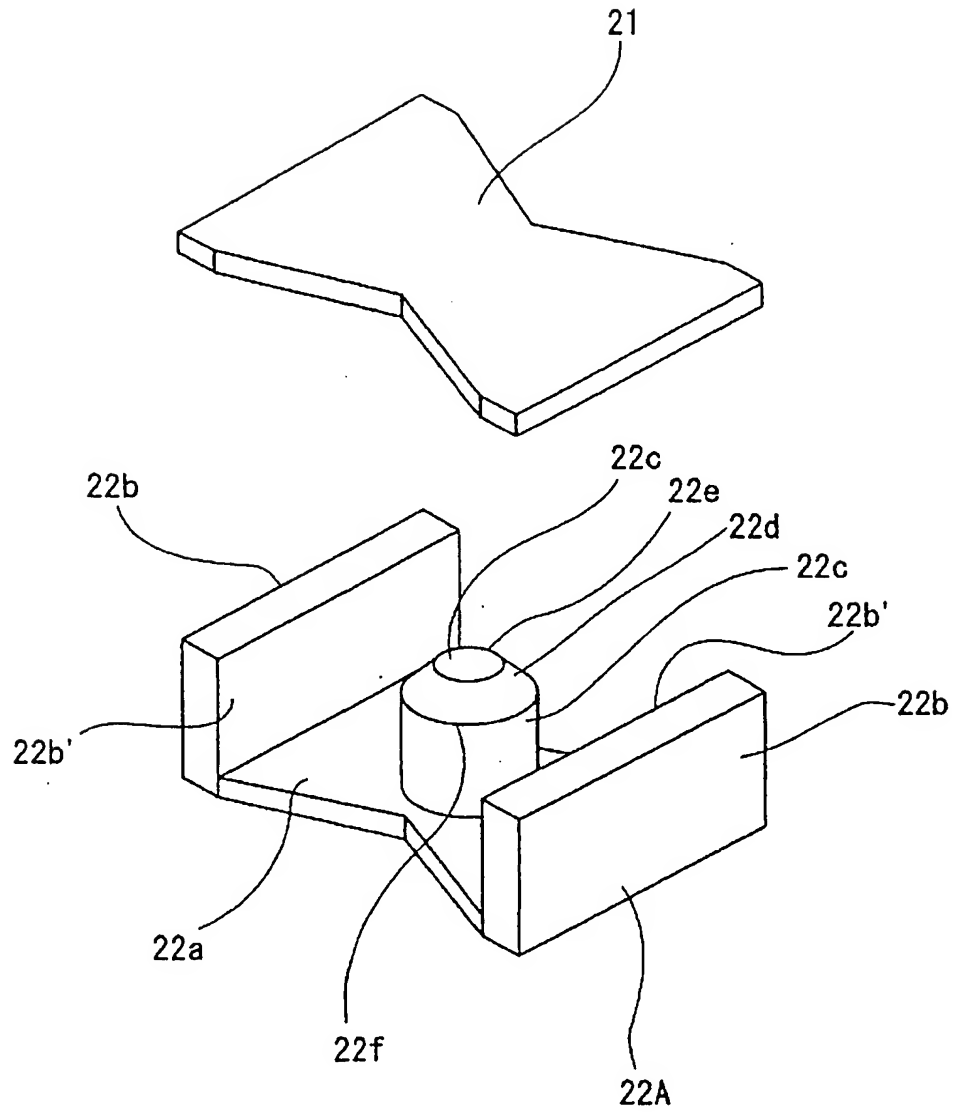


FIG. 7

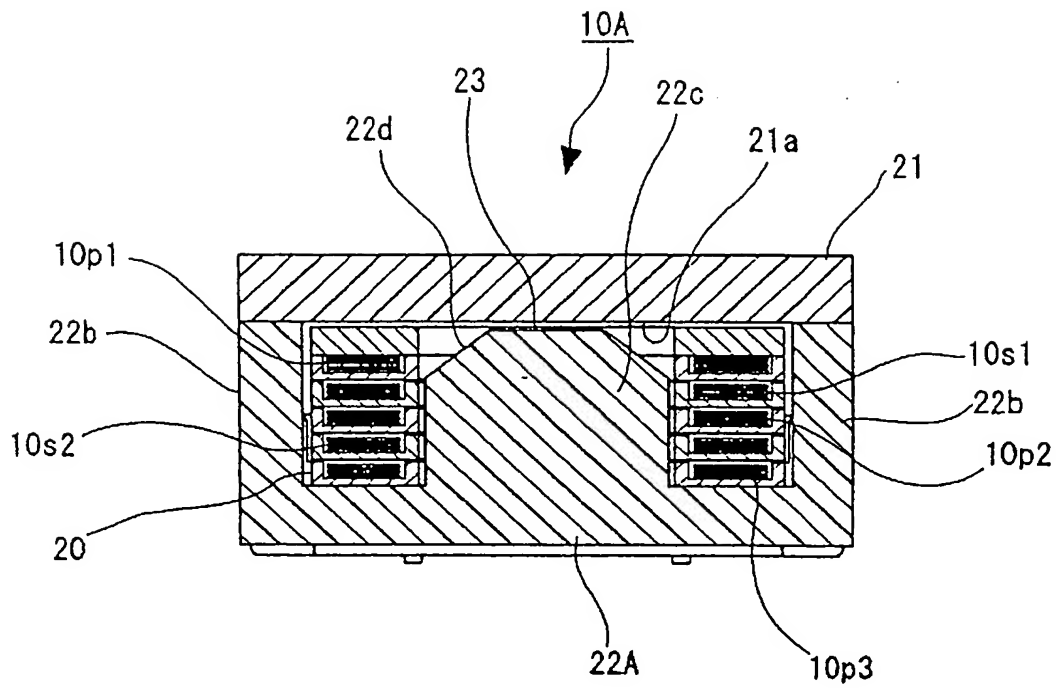


FIG. 8

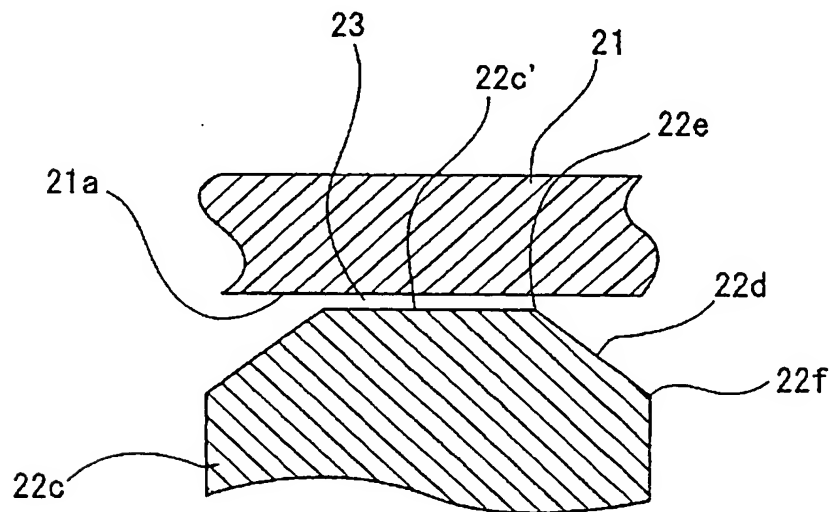


FIG.9

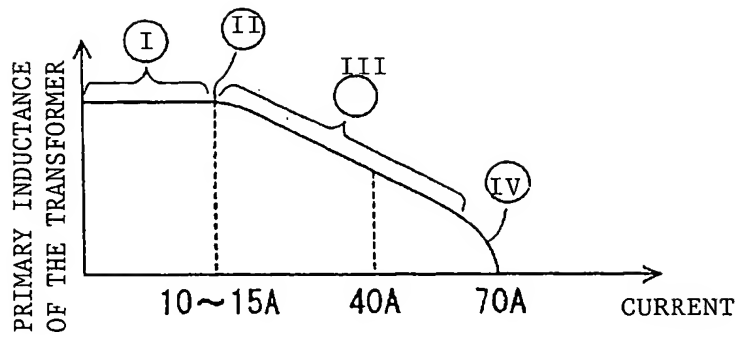


FIG.10

(COMPARATIVE EXAMPLE)

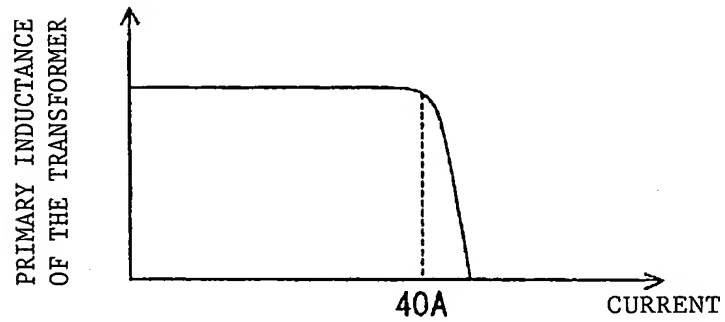


FIG. 11

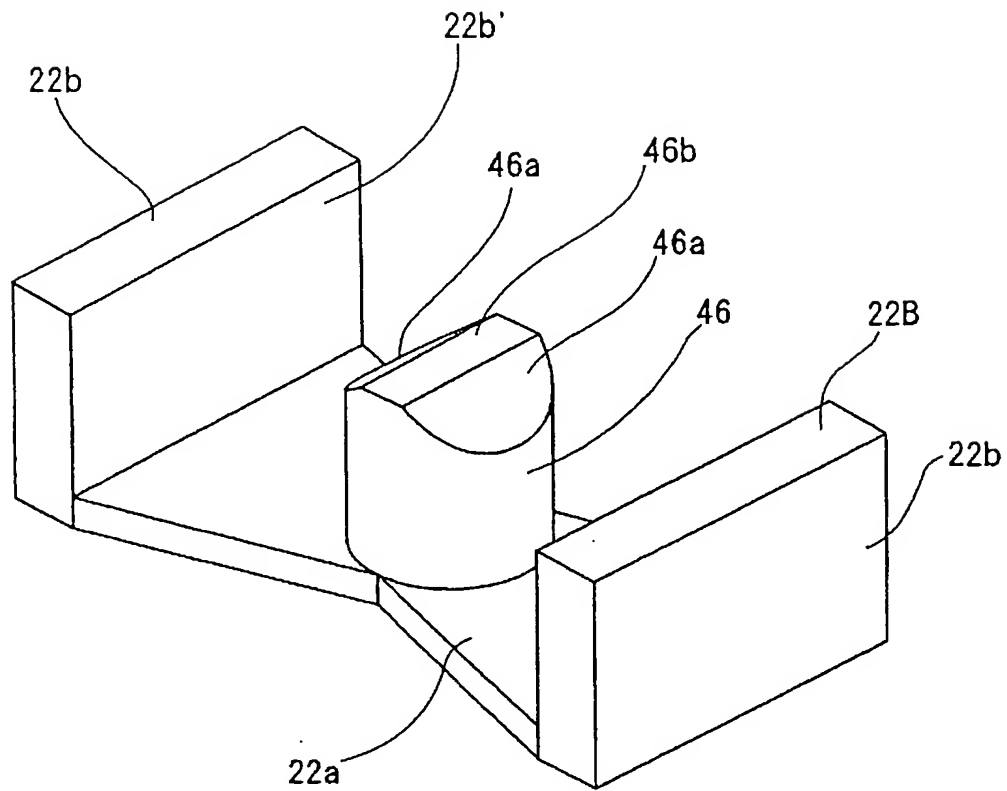
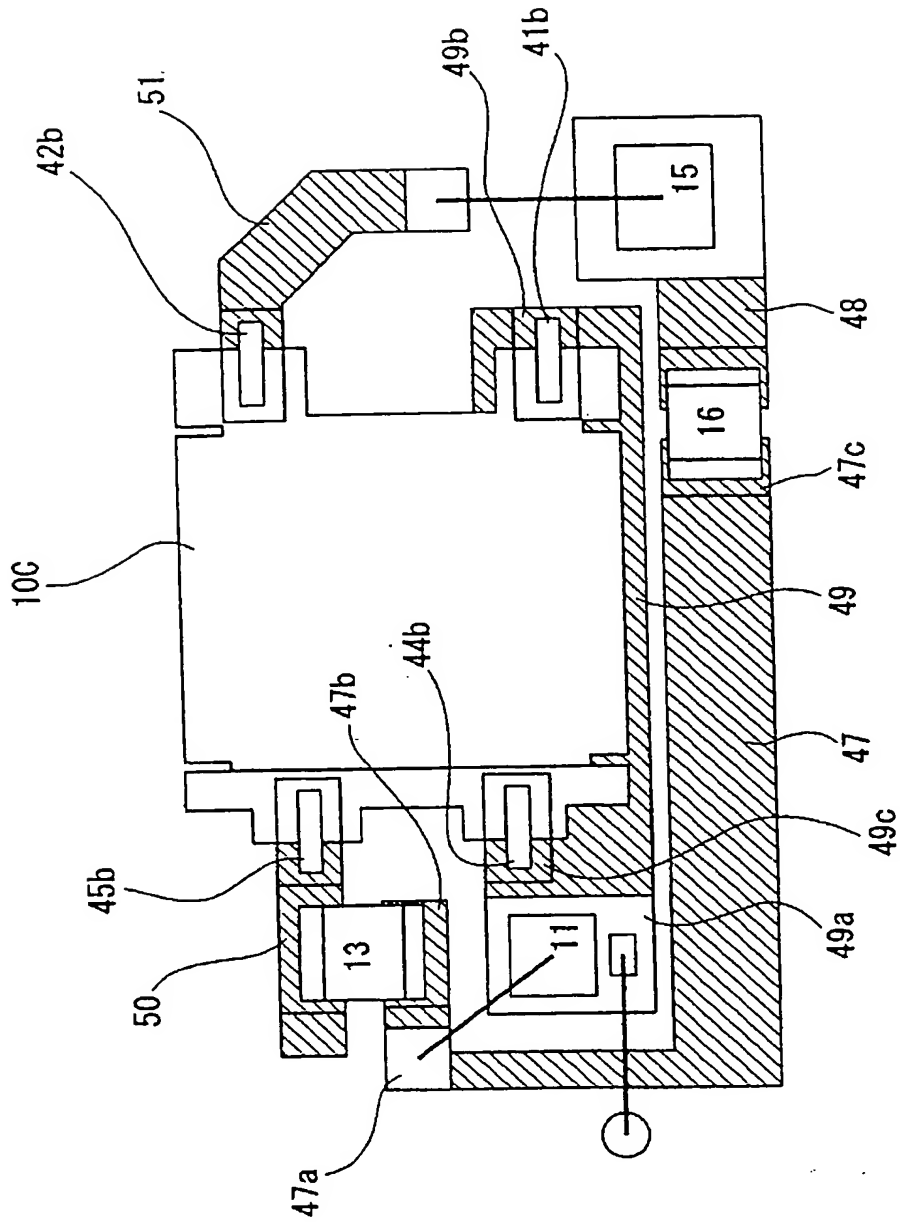


FIG.12



This exploded perspective view illustrates the assembly of a semiconductor device. The components are arranged vertically, showing their relative positions and how they fit together. At the top is a rectangular substrate 21. Below it is a square component 29 with a central circular feature 29a. Further down is a square component 24 with a central circular feature 24a and 24b, and a central circular feature 10p1. Below this is a square component 52 with a central circular feature 52a and 52b, and a central circular feature 10s1. At the bottom is a square component 31 with a central circular feature 31. To the right of these components is a rectangular component 10C. Below 10C is a square component 25 with a central circular feature 25a and 25b, and a central circular feature 10p2. Below 25 is a square component 53 with a central circular feature 53a and 53b, and a central circular feature 10s2. Below 53 is a square component 26 with a central circular feature 26a and 26b, and a central circular feature 10p3. Below 26 is a square component 40 with a central circular feature 40a and 40b, and a central circular feature 10s3. Below 40 is a square component 35 with a central circular feature 35a and 35b, and a central circular feature 10p4. Below 35 is a square component 36 with a central circular feature 36a and 36b, and a central circular feature 10s4. Below 36 is a square component 37 with a central circular feature 37a and 37b, and a central circular feature 10p5. Below 37 is a square component 38 with a central circular feature 38a and 38b, and a central circular feature 10s5. At the bottom right is a rectangular component 22 with a central circular feature 22a and 22b, and a central circular feature 10p6. The components are labeled with reference numerals: 21, 29, 24a, 24b, 10p1, 30, 24, 52, 31, 10s1, 52a, 52b, 10C, 25a, 25b, 10p2, 32, 25, 10s2, 33, 53a, 53b, 26a, 26b, 10p3, 26, 40, 34, 43a, 42a, 42b, 37, 38, 22c', 22b', 22b, 22a, 22c, 44a, 44b, 45a, 45b, 39, 41a, 41b, 36, 35, 31, 29a, 29, 21, 10p4, 10s4, 10p5, 10s5.

FIG. 14

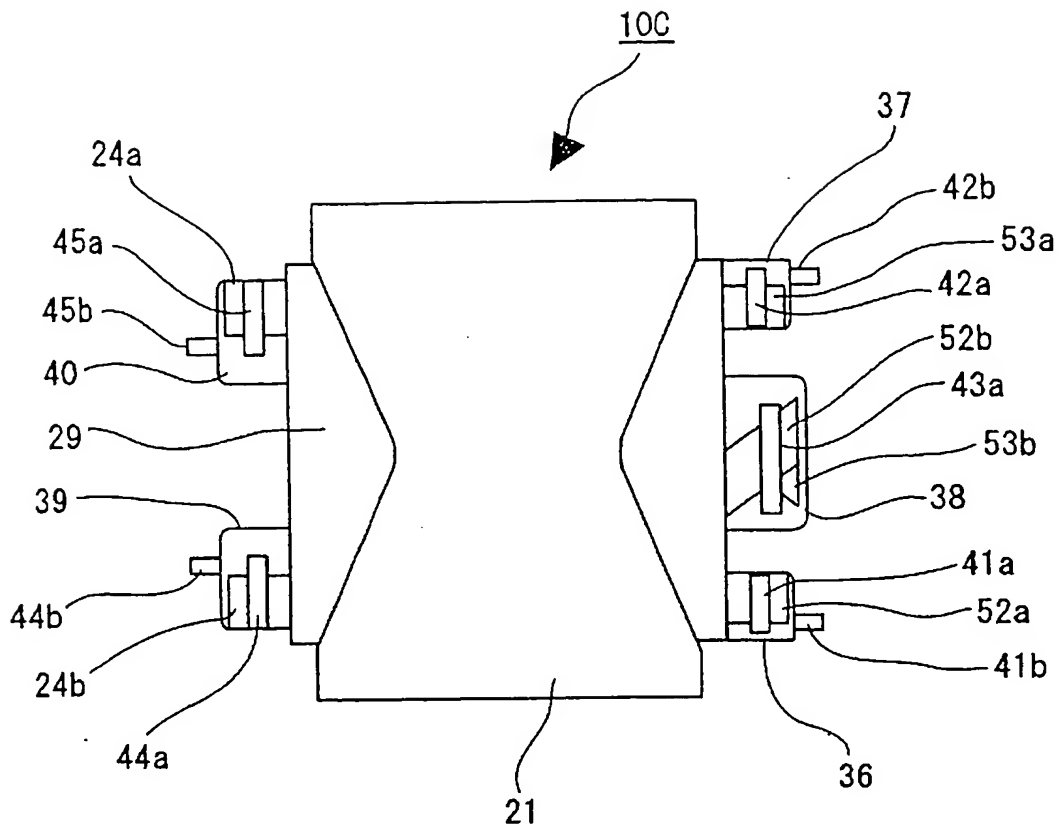


FIG.15

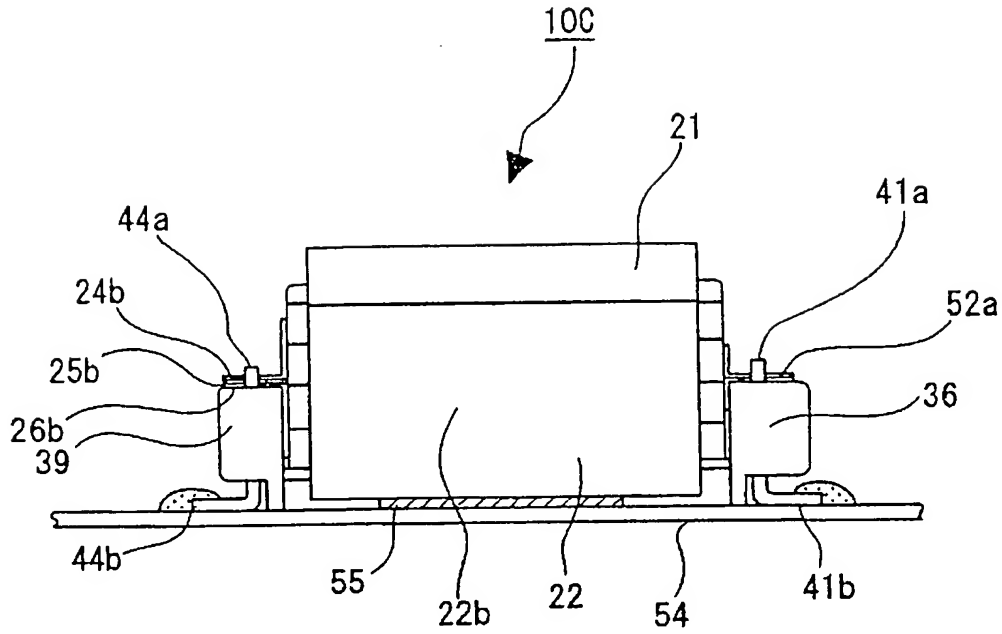


FIG.16
--PRIOR ART--

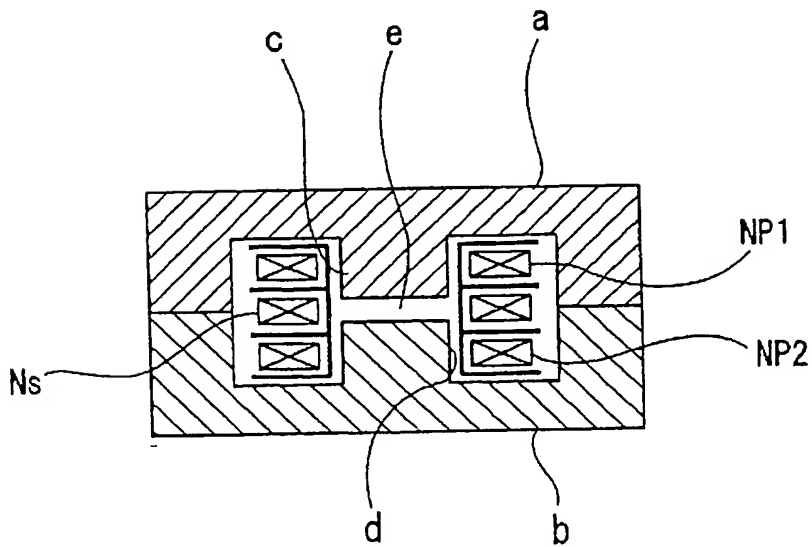


FIG.17
--PRIOR ART--

